



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/535,095

05/16/2005

Heinrich Liebisch

123171

3611

61807 7590 04/07/2008  
MAXWELL TECHNOLOGIES, INC.  
9244 BALBOA AVENUE  
SAN DIEGO, CA 92123

EXAMINER

MEHTA, MEGHA S

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

04/07/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/535,095	<b>Applicant(s)</b> LIEBISCH, HEINRICH	
	<b>Examiner</b> MEGHA MEHTA	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22-42 is/are pending in the application.
- 4a) Of the above claim(s) 37-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/16/2005</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) was submitted on 8/16/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the IDS is being considered by the examiner. Please refer to the applicant's copy of the 1449 submitted herewith.

### ***Specification***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term “substantially similar” is a relative term which renders the claim indefinite. The term “substantially” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear what level of similar constitutes “substantially similar.” Therefore, one would not know what the metes and bounds of the claims are. In a case such as this one, where “substantially similar” is not defined, one may have two solidification temperatures that differ by 15°C, and it would meet the limitations of both claims 27 and 28.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 22-25, 27-28, 32 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,440,182 Karasawa et al in view of US 3,891,901 Booe et al.

Regarding claim 22, Karasawa teaches a method of connecting two pieces with a connecting agent, where the first piece is metallic and inherently has a solidification temperature and the second piece is metallic and orthogonal to the second face of the first piece and also inherently has a solidification temperature. The connecting agent is also metallic and has a lower melting temperature than the first two pieces. All three pieces are made of nickel. This is taught in column 2, lines 4-5, column 3, lines 26-55 and column 4, lines 1-2 and 13-16 and in figure 1.

Karasawa teaches the method. Karasawa does not teach that the method involves brazing or that the dimension of the second piece is greater than that of the foil. However, Karasawa teaches soldering, which is an obvious variant of brazing to those of ordinary skill in the art. The dimension of the second piece would also be obvious to one of ordinary skill in the art because the second piece may be as thick or as thin as the artisan desires. It is dependent upon the desired final product. The claim states that the second piece is heated to "only melt the connecting agent." Karasawa melts the material on the second piece as well as the connecting agent, but as this material is soldered together to form the bond, it then, is a part of the connecting agent.

Karasawa also does not teach that the first material is a foil or that there is a dielectric interfacing material between the foils. Booe does teach foils and a dielectric interfacing material in column 4, lines 48-50 and column 6, lines 35-36, respectively.

It would have been obvious to combine Karasawa and Booe because both are teaching methods of creating capacitors with electrodes. It would have been obvious to use the foils and dielectric material of Booe in the method of Karasawa because of the desired final product and the dielectric materials improve the charge-holding properties of capacitor plates.

In regards to claims 23, 24 and 36, Karasawa further teaches a connecting agent which inherently has a solidification temperature and is placed between the first and second elements to fuse them together in column 4, lines 20-28. Karasawa also teaches the heating of the second piece without preheating in column 4, lines 44-50. Karasawa teaches the forcing of two pieces together during heating in column 4, lines 25-28. Karasawa does not explicitly teach the cooling of the connecting agent. However, this would be obvious to one of ordinary skill in the art

Art Unit: 1793

because when a material is heated to melt and join parts, it must be cooled down to solidify and lock the parts in place.

Karasawa teaches the method of joining parts together. Karasawa does not teach specifics of claim 32: the dielectric material, foil arranged to have a free edge and the second piece with an electric terminal and a second face superimposed on the first face. Booe teaches these elements in column 6, lines 35-36, column 5, lines 56-62 and figure 8 and in column 9, lines 8-12, respectively.

It would have been obvious to combine Karasawa and Booe because both are teaching methods of creating capacitors with electrodes. It would have been obvious to use the foils and dielectric material of Booe in the method of Karasawa because of the desired final product and the dielectric materials improve the charge-holding properties of capacitor plates.

Karasawa teaches the method of joining pieces together. Booe teaches the dielectric material and foils. In regards to claims 25, 27 and 28, neither Karasawa nor Booe teaches controlled cooling to remove energy or similar and different solidification temperatures of the first and second pieces. However, it would have been obvious to one of ordinary skill to make these modifications. One would want to remove extra energy in order to strengthen the product by preventing thermal degradation. Additionally, one could choose the solidification temperatures of the two pieces to be similar or different based on the compositions of the pieces desired for the final product. One of ordinary skill in the art would be able to determine what compositions are necessary for the pieces and the solidification temperatures are dependent upon those compositions chosen.

Art Unit: 1793

5. Claims 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,440,182 Karasawa et al and US 3,891,901 Booe et al as applied to claim 22 above, and further in view of US 2002/0142211 Nakanishi et al and US 2003/0064242 Wittebrood et al.

Karasawa teaches the method of joining two pieces together. Booe teaches a first component comprising aluminum in column 6, lines 40-41, which inherently has a solidification temperature of at least 635°C. Neither Karasawa nor Booe teaches a second or third material made of aluminum. Nakanishi teaches a second material made of aluminum in paragraph [0009]. Nakanishi does not teach a third material made of aluminum. Wittebrood teaches a connecting agent made of aluminum and 7% to 13% silicon with a melting temperature no more than 613°C in paragraph [0008].

It would have been obvious to combine Karasawa and Booe with Nakanishi and Wittebrood because they are all teaching the making of battery electrodes or aluminum products. It would have been obvious to include the pieces of Nakanishi and Wittebrood in the method of Karasawa because of the relatively low melting point and therefore ease of processing of aluminum.

6. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,440,182 Karasawa et al and US 3,891,901 Booe et al as applied to claim 22 above, and further in view of WO 99/60323 Subhasish.

Karasawa teaches the method of joining. Booe teaches the foils and dielectric material. Neither Karasawa nor Booe teaches the aluminum alloys required by claims 30 and 31. Subhasish teaches an aluminum alloy with up to 0.6% silicon on page 5 of the international publication. It would be inherent for this composition to have a solidification temperature of at

Art Unit: 1793

least 635°C because the elements present other than aluminum and silicon are present in amounts comparable to that of unavoidable impurities.

It would have been obvious to use the alloy of Subhasish in the method of Karasawa because aluminum alloys with up to 1% Si have improved corrosion resistance.

7. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,440,182 Karasawa et al and US 3,891,901 Booe et al as applied to claim 22 above, and further in view of US 6,291,806 Quick et al.

Karasawa teaches the method of joining. Booe teaches the foils and dielectric material. Neither Karasawa nor Booe teaches induction and electromagnetic field heating devices. Quick teaches induction and electromagnetic field heating devices used to heat the second piece in column 9, lines 56-65 and lines 39-49, respectively. Quick does not teach cooling of the devices, but the cooling of the devices would be obvious to one of ordinary skill in the art because when a material is heated to melt and join parts, it must be cooled down to solidify and lock the parts in place.

It would have been obvious to combine Karasawa and Booe with Quick because they are all teaching the bonding of workpieces. It would have been obvious to include the bonding of Quick in the method of Karasawa because of the various types of bonding that are sufficient for the joining of workpieces.

8. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,440,182 Karasawa et al, US 3,891,901 Booe et al and US 6,291,806 Quick et al as applied to claim 33 above, and further in view of US 4,720,311 Hutton et al.



Karasawa teaches the method of joining. Booe teaches the foils and dielectric material. Quick teaches induction and electromagnetic field heating devices. None of Karasawa, Booe or Quick teaches rotation of pieces for uniform heating as required by claim 35. However, Hutton uniformly heats a workpiece by rotating it over the induction coil in column 3, lines 39-43.

It would be obvious to one of ordinary skill in the art to rotate the piece in order to ensure uniform heating because the induction coil does not wrap around the object to heat evenly on all sides. This ensures a better quality product.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEGHA MEHTA whose telephone number is (571)270-3598. The examiner can normally be reached on Monday to Friday 7:30 am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/535,095  
Art Unit: 1793

Page 9

/Megha Mehta/  
Examiner, Art Unit 1793

/Jerry A Lorengo/  
Supervisory Patent Examiner, Art Unit  
1793